The Unto Site: Excavations at a Late First Millennium B.C. and Mid-Second Millennium A.D. Habitation Site in Southeastern Negros Island, the Philippines

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ALTHOUGH SOUTHEASTERN NEGROS ISLAND IN THE CENTRAL PHILIPPINES has been the focus of systematic archaeological research since the 1970s, most of this research has and continues to be (Junker 1994) focused on the Bais area (Hutterer 1981; Hutterer and Macdonald 1979, 1982). Until the late 1980s only one site (referred to by several names, including Magsuhot, Bacong, and Solamillo) outside of the Bais Anthropological Project's (BAP) research area had been systematically excavated and published (Junker n.d.; Mascuñana 1986; Tenazas 1974) (Fig. 1).

In 1987[1] and 1988–1989 I initiated a research project involving probabilistic, systematic regional survey and excavation in the Dumaguete-Bacong area, an area of approximately 30.25 km^2, situated between Dumaguete City and the town of Bacong (see Bacus 1988, 1995 for discussion of the problem orientation of this project) (Figs. 1 and 2). This area—delimited by the Banica (or Dumaguete) River to the north, Tañon Strait to the east, the 100 m elevation contour to the west,[2] and an arbitrary line extending west from the north edge of the town of Bacong to the south—was originally selected as the focus of research for two main reasons. First, possible agricultural terraces of late prehistoric or early historic age were found within a portion of this area, and one aim of the project was to investigate the chronology and developmental sequence of the terraces, and to identify the cultivated crops. Second, I aimed to record and excavate a sample of habitation sites within and surrounding the terrace area to begin to investigate late prehistoric/early historic chiefly polities in the Dumaguete-Bacong area, and more specifically, the relationship between agricultural intensification and the political economy of these polities.

Although it was not possible to complete the investigation of the presumed agricultural terraces, the project completed a c. 25 percent probabilistic, systematic surface survey that identified 72 "sites,"[3] and excavated two prehistoric settle-

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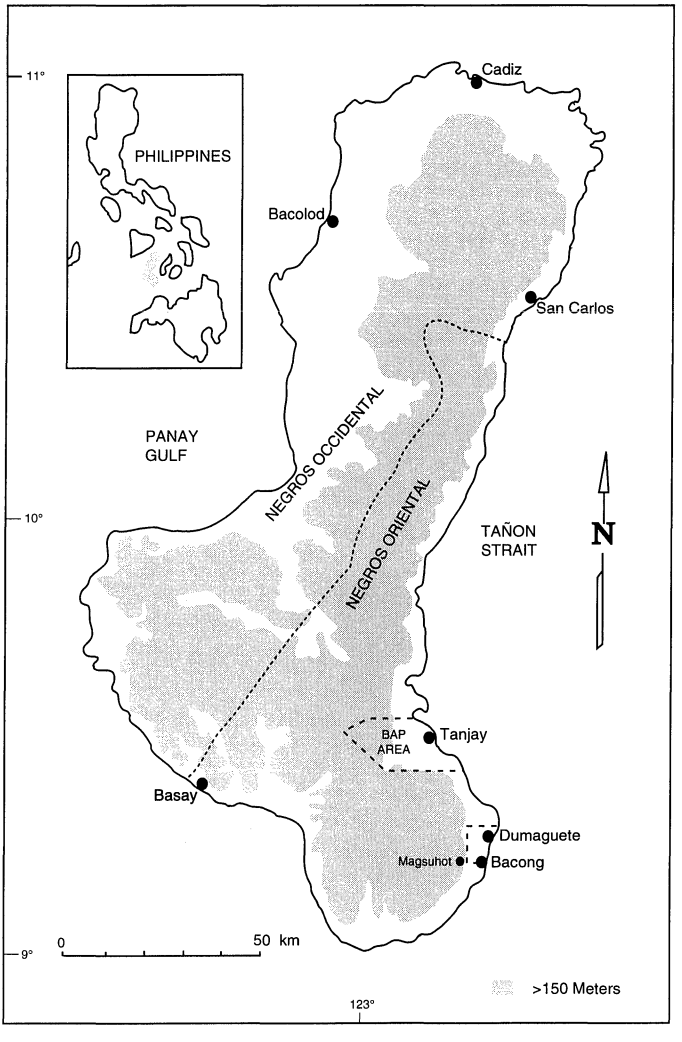

Fig. 1. Negros Island and the location of the Bais Anthropological Project (BAP) area, the Magsuhot site, and the Dumaguete-Bacong area.

ments: the Unto site and the Yap site (Fig. 2), both of which were identified and surface collected during the survey. These excavation and survey data are appropriate for investigating issues central to this ongoing research project including: the nature of and changes in sociopolitical organization in the Dumaguete-Bacong area from the late first millennium B.C. to mid-second millennium A.D. and the organization and dynamics of the nonagricultural sector of the economy of chiefly polities. It is not the intention of this paper to address such issues, as they require further analyses of the excavation and survey materials (although see Bacus 1995 for a preliminary consideration of these issues). Instead, the focus here is on the Unto site.

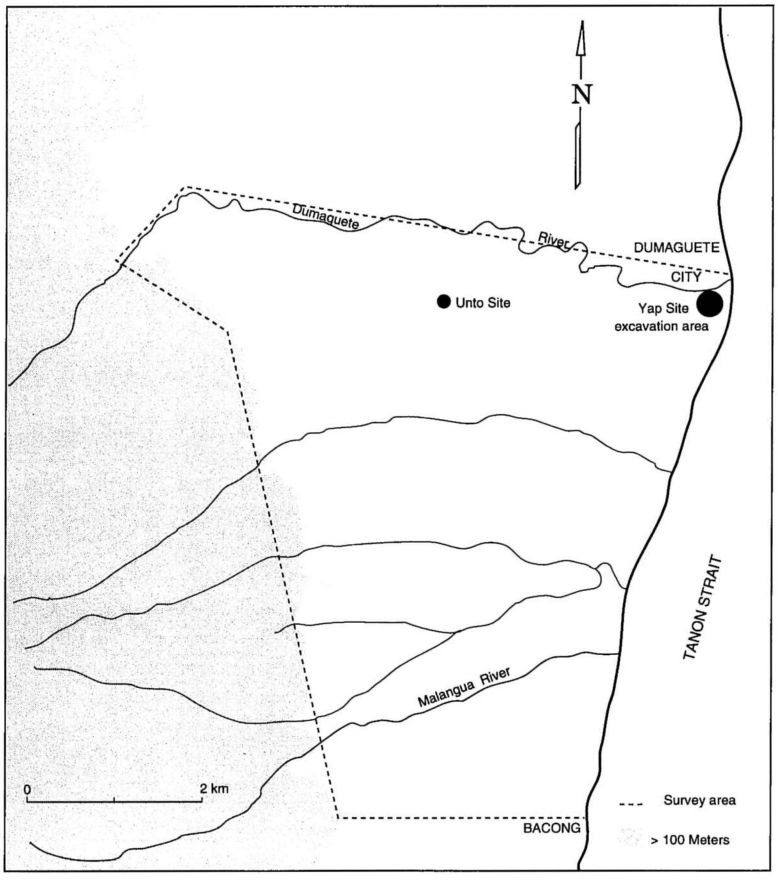

Fig. 2. Dumaguete-Bacong survey area and the location of the Unto site.

The Unto site was selected for excavation because of the types of earthenwares recovered in the surface collection. Among these were decorated wares that exhibited similarity in their design attributes to decorated earthenwares (e.g., Kalanay wares [Solheim 1964]) found at other sites in the central Philippines that have been suggested to date prior to the second millennium A.D. The presence of such decorated wares at Unto suggested a period of occupation poorly represented thus far among sites investigated in southeastern Negros. Furthermore, few sites in the archipelago that have yielded such "Kalanay" decorated wares have been systematically excavated and radiocarbon dated. Thus, the excavation at the Unto site provided an opportunity to begin to investigate issues concerning, for example, the production and intra-archipelago distribution of these wares and their sociopolitical context (e.g., as "prestige goods" in a complex polity), as well as to provide artifactual remains on which to begin to construct a regional chronology for the Dumaguete-Bacong area (see Bacus 1995 and 1996*a* for a consideration of the former issues).

This paper presents a summary of the 1989 excavations at the Unto site, which uncovered habitation remains dating to the late first millennium B.C.—one of the

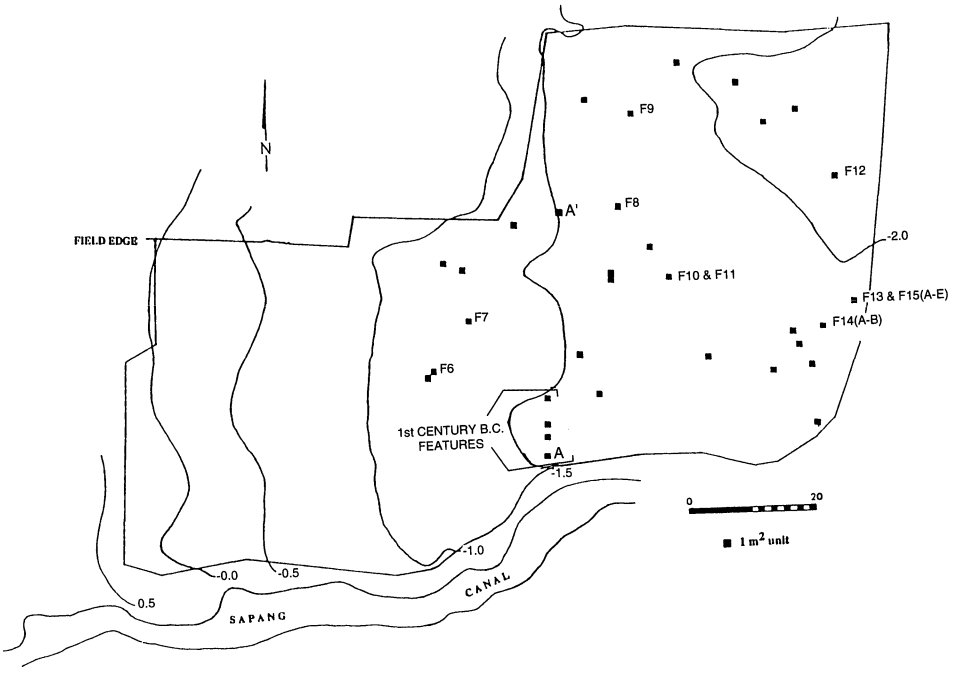

Fig. 3. Unto site map showing the location of the excavation units and excavated features.

earliest occupations so far uncovered in southeastern Negros[4]—and the mid-second millennium A.D. In addition, a summary of the material remains recovered and of the results of some of the analyses conducted thus far are presented. The paper concludes with my current interpretations of the remains from each period of occupation.

EXCAVATIONS AT THE UNTO SITE

The Unto site (Philippine National Museum site number VII-88-T3), located in Barangay Junob, Dumaguete City, was the focus of archaeological excavations from February to April 1989 (Figs. 2 and 3). The map coordinates are approximately 123°17′ E longitude and 9°18′ N latitude. The site is at c. 40 m AMSL and is situated on a gently sloping (i.e., less that 3 percent slope) alluvial fan originating from the east flank of the Cuernos de Negros volcano. It is 1 km south of the Banica River.

The majority of the site, at least the portion with visible surface remains (about 1 ha) during the period investigations were conducted, was under cultivation. Most of the area surrounding the field was planted in coconut with a heavy grass cover between trees, which obstructed surface visibility such that it was not possible to determine the boundaries of the site. At the southern edge of the field is Sapang Canal in which, according to the owners, was located a spring. The spring has been dry for an unknown period of time. To the south of the canal, ground visibility was poor and no artifacts were visible on the surface in this area. The

canal may represent the southern boundary of the later period of occupation at the site. It was not possible to conduct systematic augering outside of this field, and thus the site boundaries are currently defined by those of the field.

Excavation Strategy

The initial systematic surface collection of the site covered a portion of the field, about 4775 m^2 in size. The remainder of the field (about 4435 m^2) was surface collected at the end of the excavations, by which time it had been plowed. The latter area was not included in the systematic test excavations. Provenience data were recorded for all surface collected artifacts. The surface collections yielded 1269 earthenware sherds (50 of which are decorated), 61 Asian and European wares, a stone with carved decoration (possibly a jar lid), a fragment of a possible earthenware bracelet, nine metal (primarily iron) fragments, a fragment of a large quartzite flake, 49 marine shells, one Spanish clay pipe, one fired clay lump, and one glass fragment.

A stratified random sampling strategy was used to excavate this site for three reasons: (1) I had no informed bases on which to make a judgmental selection; (2) I wanted to be able to investigate the relationship between the distributional characteristics of the surface artifacts and the subsurface distribution of artifacts and features to facilitate later calculation of feature densities and for use in interpreting sites of similar type (e.g., function, time period) identified during the survey but not excavated; and (3) I wanted to obtain a nonclustered sample of the features and artifacts within the site.

The excavation sample was stratified on the basis of different densities of earthenware sherds found on the surface. A nonproportional random sample from each of four density strata was used to select 34 m^2 units for excavation: 0.5 percent of the 0 density units were selected for a total of 16 units, 1 percent of the 1–3 density units for a total of 13 units, 1 percent of the 4–6 density units was selected for a total of 3 units, and 2.5 percent of the 7+ density units were selected for a total of 2 units. An additional 16 m^2 units were planned for excavation, to be selected on the basis of the findings in the first 34 units. Fifty m^2 units was determined to be a reasonable figure for excavation given the size of the crew and time available. However, it was only possible to excavate 35 units in the 6.5-week excavation period.

Prior to excavation, the site and the immediate surrounding area was surveyed with a transit and stadia rod, with a permanent datum established at a cement property marker just off of the north edge of the field and 76 m N43 degrees from the site excavation datum. The site excavation/grid datum was established in the southwest corner of the field, an area which was not designated for excavation, and was assigned N100E100. Grid north corresponded to N0 degrees. The northwest corner of each excavation unit was located in place from the site datum, the surface elevation recorded, and during excavation the unit datum was used in recording elevations of artifacts and features.

Excavation was conducted by trowel and followed natural stratigraphy. Strata were identified by changes in physical characteristics, primarily texture, color, and compactness. Ten centimeter arbitrary levels were used to provide additional provenience control when deposits exceeded 10 cm in thickness. All excavated

sediment was screened through 0.635 cm (0.25 in.) mesh and bagged separately by strata or by 10 cm levels within each when appropriate. Clusters of artifacts, in addition to large single artifacts, were piece-plotted. Features were excavated, screened, and bagged separately. One-half liter sediment samples of each strata were taken from a column along one wall at the end of excavation, as well as from each feature. Flotation samples and phytolith samples were taken from all features and cultural deposits. Charcoal samples for radiocarbon assays were taken when available. Units were excavated until culturally sterile layers were reached.

Stratigraphy and Chronology

The Unto site is a multicomponent habitation site with two periods of prehistoric occupation revealed in the excavations. In addition, Spanish period artifacts were found on the surface and in the plow zone and possibly one early Spanish period feature was uncovered. A small quantity of modern material was also encountered on the surface and in the plow zone of some of the excavated units.

The strata were quite variable across the site, and since it is not possible to present here a detailed description of each excavation unit, the strata from five units located along a 38 m approximately north-south line (indicated by A–A′ in Figure 3) across the site are described in Table 1 to provide an example of the stratigraphy encountered. Figure 4 illustrates the west profiles of these units, four (N114E161, N17E161, N119E161, and N123E161) of which are located along a 10 m north-south line, and one (N152E163) of which is located within 2 m of the same north-south line and 29 m to the north.

The chronology of the prehistoric occupation of this site is based on four charcoal samples that were radiocarbon dated and on comparison with glazed Asian trade wares and dated earthenware technological types from other sites in the region (i.e., Yap and Tanjay). The small size of the submitted charcoal samples, as well as of all the recovered samples from the excavation, necessitated AMS dating which, due to the increased cost, reduced the number of samples that could be submitted. The four samples derived from three features: Features 3, 12, and 15 (see Table 3). Samples from these particular features were selected on the basis of the earthenware assemblages each contained. Feature 3 yielded earthenwares (technological types 1–7 [see discussion below]) distinct from those found in Features 12 and 15, which yielded many of the same earthenware types (i.e., technological types 9, 14–21, 23, 26–27, 29–30, 32–35). Most of the other features and layers contained earthenwares similar to either those found in the former feature or to those found in the latter two features, with very little evidence of mixing of these wares. The initial interpretation, later confirmed by the radiocarbon results, was that the different earthenware assemblages indicated temporal differences, and thus the charcoal samples from these features were submitted for radiocarbon dating.

Table 2 presents the four radiocarbon dates, the calibrated intercepts, and one sigma age ranges. Calibration of Beta 39609 indicates recent contamination of the sample and is eliminated from further consideration. Beta 39608 from Feature 12 provides a radiocarbon date with calibrated intercepts in the sixteenth and early seventeenth centuries A.D. and a one sigma age range from the late fifteenth to mid-seventeenth centuries A.D. This date provides some corrobora-

TABLE 1. DESCRIPTION OF STRATIGRAPHY IN SELECTED EXCAVATION UNITS

UNIT	LAYER	DESCRIPTION
N114E161, N117E161, N119E161, N123E161	I	A plow-disturbed grayish brown (10YR 5/2) to very dark grayish brown (10YR 3/2) silt loam; contained primarily 15th century A.D. artifacts
	II	A more compact very dark gray (10YR 3/1) to black (10YR 2/1) silty clay loam midden; contained primarily 1st century B.C. artifacts
	III	A compact charcoal-flecked dark gray (10YR 4/1) to very dark brown (10YR 2/3), with light olive brown (2.5Y 5/4) mottling, clay loam midden; contained 1st century B.C. artifacts
	IV	A very compact light brownish gray (2.5Y 6/2) to olive brown (2.5Y 4/6), with dark brown (10YR 3/3) mottling, silty clay to clay loam; contained 1st century B.C. artifacts
	Va	A culturally sterile light yellowish brown (2.5Y 6/4) to olive brown (2.5Y 4/6), with gray (10YR 6/1) mottling, sandy loam
	Vb	A culturally sterile light gray (2.5Y 7/2) to light olive brown (2.5Y 5/4) sandy loam
	VI	A culturally sterile dark gray (10YR 4/1) to dark brown (10YR 3/3) fine sand with pebbles and small stones
N152E163	I	Same description as layer I above except contained only post-15th-century artifacts
	IIa	A culturally sterile compact brown (10YR 3/3) to dark grayish brown (10YR 4/2) clay loam, mottled with brownish yellow (10YR 6/8), dark gray (10YR 4/1) and yellowish red (5YR 5/8)
	IIb	A culturally sterile strong brown (7.5YR 4/6), mottled with red (2.5YR 4/8), dark yellowish brown (10YR 4/6) and dark brown (10YR 3/3), clay loam
	IIc	A culturally sterile light olive brown (2.5YR 5/4), mottled with red (2.5YR 4/8) and yellowish brown (10YR 5/6), clay loam

tion for dating Feature 12 to the fifteenth century based on the presence of a blue-and-white Asian trade ware of this date from the overlying deposit. As a result, other features and deposits containing the same earthenware technological types as those found in Feature 12 may also be dated to the fifteenth century (cf. Bacus 1996*b*). Further support of this dating is provided by the presence of earthenware technological types dated to the fifteenth–sixteenth centuries A.D. from the Yap site and from possibly the Bais area in layers immediately above those dated to the fifteenth century. Since the layers overlying the fifteenth-century deposits also contain a few Spanish artifacts (i.e., pipe bowls), these layers have been assigned to the post-fifteenth century. This dating requires corroboration from further radiocarbon determinations.

The two samples from Feature 3 are statistically the same at the 95 percent level and have been averaged according to Stuiver and Reimer (1993), which produces a calibrated intercept of B.C. 57 (one sigma age range of B.C. 169–163). A 1500–1600 year hiatus between the two occupations of this site is suggested by

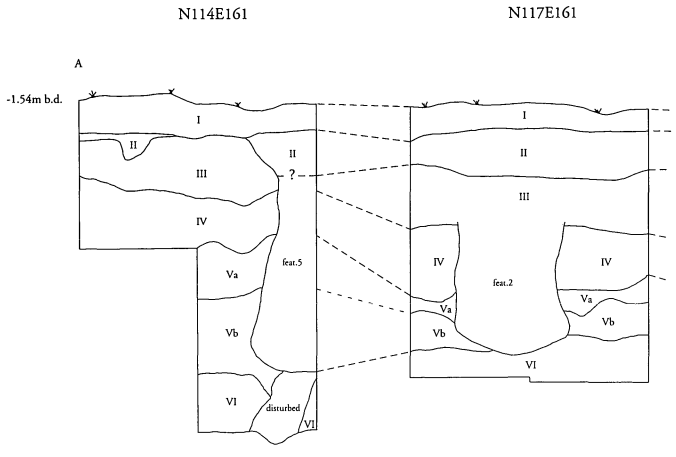

Fig. 4a. Stratigraphic profiles from Units N114E161 and N117E161 (see Fig. 4b).

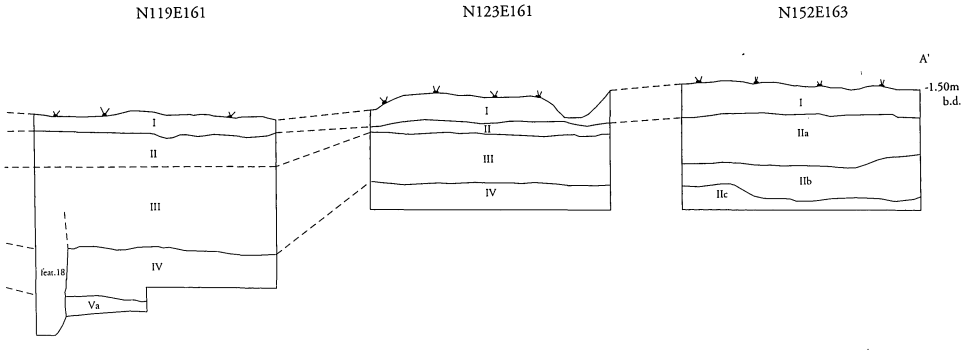

Fig. 4b. Stratigraphic profiles from Units N119E161, N123E161, and N152E163 (distance between units is not to scale).

these results. With regard to the earlier dates, because no sites have been dated to this period in southeastern Negros, it is not possible to assess the accuracy of these dates through, for example, a comparison of earthenware assemblages. Old wood charcoal samples may pose a potential problem in the Philippines, and in any tropical environment with hardwoods, producing dates older than the associated cultural remains. Unfortunately, comparative carbonized wood samples do not exist for the Philippines nor for any other comparable area in Southeast Asia and thus it is not yet possible to identify the charcoal before submitting samples for radiocarbon dating.

Habitation Features

Twenty-three habitation features were uncovered during the excavations, eight (Features 1–5, 16–18) are dated to the first century B.C. period of occupation, fourteen (Features 6–8, 10–13, 14a–b, 15a–e) to the fifteenth-century A.D. occu-

TABLE 2. RADIOCARBON DATES FOR THE UNTO SITE (VII-88-T3)

SAMPLE NO.	CONTEXT	^{14}C AGE[a]	CALIBRATED INTERCEPTS[b] (1 SIGMA AGE RANGE)
Beta 39606	Feature 3-pit (depth 86 cm)[c]	2030 ± 65	B.C. 31, 18, 9 (B.C. 97–A.D. 63)
Beta 39607	Feature 3-pit (depth 93 cm)	2205 ± 105	B.C. 342, 320, 203 (B.C. 389–101)
Beta 39608	Feature 12-pit (depth 56.5 cm)	325 ± 60	A.D. 1527, 1553, 1633 (A.D. 1479–1652)
Beta 39609[d]	Feature 15-pit/post mold (depth ~80 cm)	200 ± 60	A.D. 1672, 1781, 1795, 1953 (A.D. 1654–1954)

[a] Conventional radiocarbon age.
[b] Calibrated using CALIB (rev 3.0.3) from Stuiver and Reimer (1993) and using 20-year values from Stuiver and Pearson 1993.
[c] All depths are below the respective unit's datum.
[d] The calibrated two sigma range for this sample, A.D. 1529–1955*, "denotes influence of bomb C-14" (Stuiver and Reimer 1993) and so this sample has been eliminated from further consideration.

pation, and one (Feature 9) to possibly the post-fifteenth-century A.D. occupation (Fig. 3). Two of the features have been radiocarbon dated, as discussed above, while the remainder have been either cross-dated on the basis of the earthenware technological types each contained or, for those not yielding artifacts, dated on their stratigraphic position. Table 3 presents a description of features by occupation period. Interpretation of these features is discussed after the artifactual remains and their analyses are presented.

Material Remains

The excavations yielded several classes of material remains. The most abundant was earthenware pottery, totaling 1778 sherds (see below for a discussion of the earthenware analyses) and one possible earthenware bracelet fragment. Small quantities of other remains were uncovered, including lithic artifacts, sherds of glazed Asian trade wares and European wares, metal fragments, Spanish clay pipes, fired clay lumps, shell, bone and tooth fragments, and glass fragments. These materials are discussed below according to the periods of occupation identified from the stratigraphy, radiocarbon determinations, and associated artifacts of known age. It has not been possible to assign a date to all of the material remains, as some were recovered only from disturbed contexts (e.g., plow zone).

First Century B.C. — Four hundred forty-four earthenware sherds (including five decorated [three of which are illustrated in Fig. 5] and 30 with red slipped exteriors) and a portion of a possible earthenware bracelet date to this period of occupation. In addition to earthenware pottery, several other classes of material remains were uncovered in the excavations. These include two fired clay lumps, two shell fragments, and at least one lithic artifact. The latter is a fine-grained chert distal fragment of a blade with an offset triangular cross section. The core was probably heated in advance, as the dorsal surface bears a pot lid crater. There is retouch along one lateral margin near the distal margin. Two lithic artifacts are tentatively

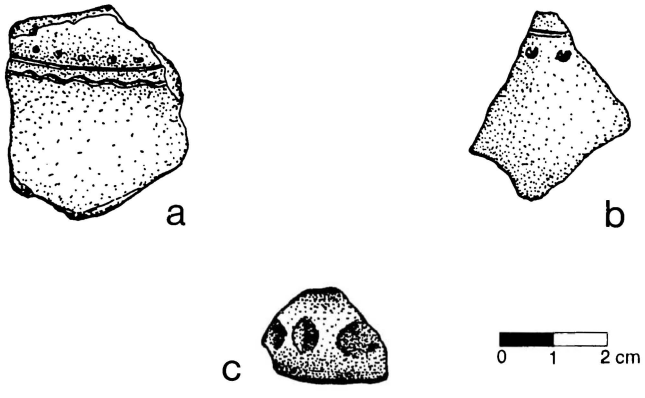

Fig. 5. Sample of late first millennium B.C. decorated earthenwares.

dated to the first century and include a chert flake fragment and either a fragment of a biface or a proximal fragment of a bipolar chert flake. Small bone fragments were also encountered during the excavation but disintegrated upon removal.

One of the decorated earthenwares (Fig. 5*c*) is similar in its decorative attributes (e.g., carved/impressed scallops interspersed with triangular notches) to those referred to as Kalanay Impressed and Bagupantao Impressed, which Solheim (1964) has assigned to the "Iron Age." Such decorated wares have been recovered from the Kalanay site on Masbate (Solheim 1964) and from sites collected by Guthe (1927, 1928) during his 1922–1925 work in the central Philippines (the materials from which are housed in the Museum of Anthropology, University of Michigan), including site C11 on Bohol; sites B23, C36, C40, C51, and C74 on Siquijor; and site B1 on Negros (none of which have been dated by absolute methods, although see Bacus 1995 for dating of various artifact classes from these sites). Similar decorated wares have also been recovered from the 1972 (Mascuñana 1986) and 1974 (Tenazas 1974) excavations of the Magsuhot/Solamillo site and may date to the third century A.D. based on an initial correlation of the 1974 and BAP 1981 stratigraphy (one radiocarbon date of 1820 ± 270 B.P.) (Junker n.d.: 80). The two radiocarbon determinations from the earliest occupation at Unto and the one from the earliest occupation at Magsuhot/Solamillo are statistically the same at the 95 percent confidence level (Stuiver and Reimer 1993) suggesting the early occupations of the two sites may have been contemporaneous.[5] Additional radiocarbon determinations are required to evaluate their contemporaneity. Regardless, the Unto excavations provide the first radiocarbon dates for a decorated earthenware of the Kalanay/Bagupantao Impressed type.

Fifteenth Century A.D. — Earthenware sherds comprise the majority of the material remains from this period of occupation. Four hundred thirty-six (including one with red slip and 34 decorated [nine of which are illustrated in Fig. 6] with an additional 53 decorated sherds from the surface collection dated to this period) were recovered in the excavations. Other material remains include one sherd of a blue-and-white Asian trade ware, several fired clay lumps, one tooth fragment, and two shell fragments. A bipolar flake of coarse-grained chert may also date to this period, as might a proximal fragment of a flake of coarse-grained material that has been assigned to the fifteenth/post–fifteenth century A.D. In addition, 12 earth-

TABLE 3. DESCRIPTION OF UNTO HABITATION FEATURES

OCCUPATION PERIOD	FEATURE #	TYPE	DIMENSIONS[a]	CONTENTS	OTHER COMMENTS
First century B.C.					
	1	Circular pit or post mold	26× c. 30 × 51.5 cm	None	Feature was capped by a midden containing earthenware sherds of 1st century B.C. tech. types and volcanic tuff
	2	Circular pit	c. 46 dia. × 54 cm	Earthenware sherds (1st century B.C. tech. types)	Feature was capped by a midden containing earthenware sherds of 1st century B.C. tech. types, charcoal and other burnt organic material (see Fig. 4 for profile)
	3	Semicircular pit	70× c. 80 × 49 cm	Earthenware sherds (1st century B.C. tech. types)	Same comment as above
	4	Circular pit	c. 30 × 27 × 24 cm	Earthenware sherds (1st century B.C. tech. types	Same comment as above but no charcoal
	5	Semicircular pit	c. 45 × 30 × 80^{+} cm	Earthenware sherds (1st century B.C. tech. types) and charcoal	Same comment as above but no other burnt organic material (see Fig. 4 for profile)
	16	Semicircular pit	33 × 36 × 29 cm	Earthernware sherds (primarily 1st century B.C. tech. types) and charcoal	Feature was capped by a midden that contained earthenware sherds and charcoal
	17	Oval basin	17 × 23 × 7 cm	None	
	18	Semicircular pit	50 × 60 × 55 cm	Earthenware sherds (1st century B.C. tech. types), clay lump and charcoal	(See Fig. 4 for profile)
Fifteenth century A.D.	6	Circular pit or post mold	c. 26 × 24 × 30 cm	Earthenware sherd (15th century tech. type)	Feature was capped by a midden that contained earthenware sherds of primarily 15th century tech. types, fired clay lumps and charcoal

	7	Semicircular pit or post mold	33× c. 35 × 31 cm	None	
	8	Solidified area or burnt/oxidized rock	>1 m^2	Charcoal	
	10	Circular pit	14 cm dia.×12 cm	None	
	11	Oval basin	8 × 11 × 8 cm	Clay	
	12	Deep circular basin	100 × 140 × 33 cm	Earthenware sherds (15th century tech. types) and charcoal	Basin was capped by a midden that contained earthenware sherds of primarily 15th century tech. types
	13	Post mold	5 cm dia. × >2 cm	None	Post mold was cut into a midden that contained earthenware sherds of primarily 15th century tech. types
	14a,b	Post molds	7 cm and 6.5 cm. dia.	None	Post molds were within a midden that contained earthenware sherds of primarily 15th century tech. types
	15a	Circular pit or post mold	15 cm dia. × 24 cm	None	Feature was situated within a midden that contained earthenware sherds of primarily 15th century tech. types and charcoal
	15b	Post mold	13 cm dia. × c. 10 cm	Earthenware sherd (15th century tech. type)	Same comment as for feature 15a
	15c	Oval pit	17 × 7 × 42 cm	None	Same comment as for feature 15a
	15d	Rectangular post mold?	14 × 20^{+} × 4 cm	None	Same comment as for feature 15a; a large rock in the western portion of this feature may have served as a post support
	15e	Post mold?	27 × 26 × 10 cm	Earthenware sherd (15th century tech. type)	Same comment as for feature 15a
Post-fifteenth century A.D.:					
	9	Post mold	11 cm dia. × 13 cm	None	

[a]Dimensions are N-S × E-W × minimum depth except where otherwise noted.

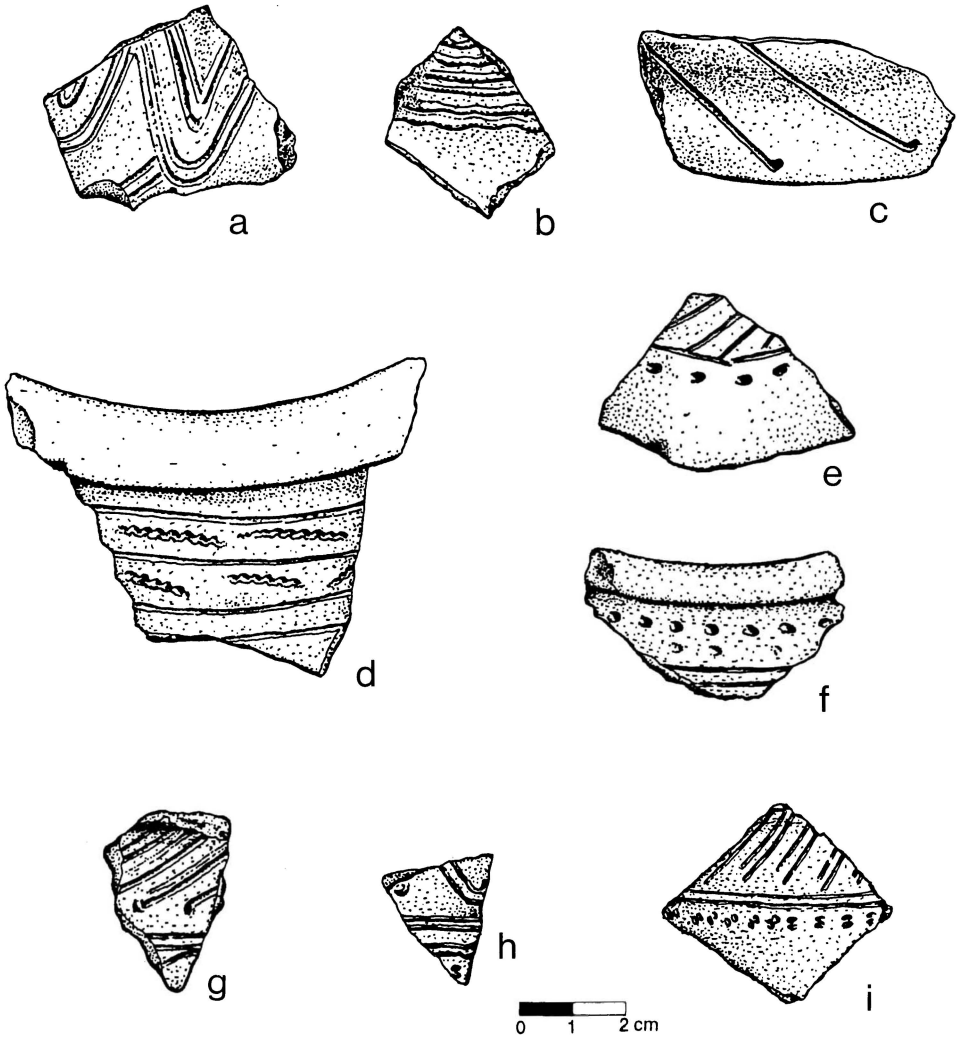

Fig. 6. Sample of fifteenth-century A.D. decorated earthenwares.

enware sherds are technological types identified from the fifteenth–sixteenth century A.D. occupation at the Yap site (located in Dumaguete City [Bacus 1995]); one sherd may be a fifteenth–sixteenth century A.D. technological type from the Bais area (Junker 1990); and 67 earthenware sherds (including two decorated) have been assigned a fifteenth/post–fifteenth century A.D. date since their contexts do not allow a finer chronological assessment to be made at this time. There is also some evidence for the possible occupation of the site in the period immediately preceding the fifteenth century A.D. as suggested by the presence of 14 earthenware sherds dated (based on their technological similarity to types identified at the Yap site [Bacus 1995] and at Bais sites [Junker 1990]) to the eleventh century A.D. and twelfth–fourteenth centuries A.D. However, none of the strata yielded earthenwares exclusively or even primarily of these periods.

Eight of the decorated earthenwares (three of which are illustrated in Fig. 6*g*, *h* and *i*) and six of the surface-collected decorated earthenwares dated to the fifteenth century A.D. are almost identical to decorated wares (i.e., Kalanay Incised) from a number of sites, including two as yet undated sites (VII-88-G3 and VII-88-S3) recorded during the 1988 Dumaguete-Bacong survey; three sites on Masbate Island including Kalanay Cave (Solheim 1964), Bagumbayan (Bay-Peterson 1987), and Tomongan (Bay-Peterson 1987); two sites on Palawan Island including Sasak Cave (Fox 1970) and Saigung Rockshelter (Kress 1980); and from sites on Samar Island (Hutterer 1969, cited in Hutterer 1977 : 189). Such decorated earthenwares are also present at two sites collected by Guthe during his 1922–1925 work in the central Philippines (the materials from which are housed in the Museum of Anthropology, University of Michigan) (Guthe 1927, 1928): site C13 on Tatlong Island and site C68 on Palawan Island. Unfortunately, none of these sites (or the specific contexts from which these decorated wares derive) have been dated by absolute methods, although such wares have often been assigned to the Iron Age period in the Philippines (see however Bacus 1995 for cross-dating of C13 earthenwares). Bay-Peterson has observed that among 19 sites in Masbate, such decoration is "nearly always in association with imported porcelains" (1987 : 79), which suggests a post–tenth century A.D. date for these decorated wares. Clearly, the issue of their chronology can only be resolved by obtaining absolute dates from secure contexts. Although at the Unto site these decorated wares derive from the fifteenth century A.D. occupation, this is based on only one date and further radiocarbon determinations are required to evaluate this date.

Three of the decorated sherds (one from the surface collection) dated to the fifteenth century A.D. share attributes (e.g., carved/impressed scallops, carved triangular-shaped notches) with the Kalanay Impressed/Bagupantao Impressed wares discussed above. Their presence suggests that either some of these decorative attributes persisted into later periods or that the fifteenth century A.D. date for the later occupation is incorrect. Again, additional radiocarbon assays are required to determine which of these scenarios is the case.

Post-Fifteenth Century A.D. — A number of artifacts recovered in the excavations are post–fifteenth century A.D. in age, for example, Spanish pipes and sherds of European ceramics. One hundred eighty-five earthenware sherds (including six decorated sherds) have been assigned to this period based on their stratigraphic location (i.e., from deposits overlying those dated to the fifteenth century A.D.). Earthenwares recovered exclusively from the plow zone and which could not be assigned to one of the dated technological types (see below) cannot yet be assigned a date. Other remains include fired clay lumps, metal fragments, iron slag, shell, and bone/tooth fragments. Two lithics, a probable distal fragment of a large flake of coarse-grained chert and a fragment of a heat fractured chert biface (possible edge present), have also been assigned to this period.

EARTHENWARE ANALYSIS

The earthenware sherds from all periods of occupation at the Unto site have been the focus of technological, morphological, and stylistic analysis. The morphologi-

cal and technological analyses of the earthenwares, presented below, are important to the investigation of several issues of interest to the research project, including the role of style in the late first millennium B.C. and mid-second millennium A.D., site function(s), and the position of sites within the sociopolitical hierarchy.

As noted above, decorated earthenwares were recovered from all periods of occupation at the site (with a number of decorated sherds not yet possible to date). One of the first century B.C. and seventeen of the fifteenth century A.D. decorated earthenwares are similar in their decorative attributes to earthenwares which are referred to as Kalanay Impressed/Bagupantao Impressed and Kalanay Incised recovered from a number of sites (Solheim 1964). Both the Kalanay Impressed/Bagupantao Impressed and the Kalanay Incised types of decorated earthenwares from Unto have been, in conjunction with their respective similarly decorated wares from the other sites mentioned above, the recent focus of stylistic and, where possible, technological analyses (see Bacus 1995, 1996*a*). It is not possible to present the theoretical and methodological details of this study here. Briefly though, these analyses sought to evaluate whether the high degree of stylistic similarity exhibited among the Kalanay Impressed/Bagupantao Impressed and the Kalanay Incised decorated earthenwares, respectively, was the result of distribution (i.e., exchange) from a limited number of production centers and/or represented a shared elite iconographic style (*sensu* Plog 1990; Wiessner 1985). In the case of the latter, the motifs of each decorative style would be highly redundant (statistically) and each style would have been produced within the polities whose elite participated in this shared symbolic system.

Morphological Analysis

Morphological analysis of the Unto earthenware assemblage was conducted for two purposes. The first was to provide an initial classification of earthenware vessels in terms of overall size and shape for each time period, as well as to elucidate variation in vessel morphology over time. Such information will potentially allow assessment of functional variation in ceramics, which in turn may be used in conjunction with other archaeological evidence to evaluate site function(s). Second, I wanted to identify temporal variation within each vessel form; specifically, variation in rim design/morphology to establish, in combination with analyzed rims from other Dumaguete-Bacong sites (i.e., Yap, Magsuhot/Solamillo), a second regional earthenware-based chronology (currently in progress). The database for this analysis was primarily comprised of the 221 rim sherds recovered from excavation ($n = 81$) and surface collection ($n = 140$). Rims were selected for several reasons: (1) few whole vessels were recovered from the excavations; (2) they provide a good estimate of the general dimensions of vessel size and shape, which may relate to vessel function (particularly of utilitarian wares) (Rice 1987; Rye 1982; Sackett 1977); and (3) previous studies in southeastern Negros indicate that rim design (i.e., rim orientation and shape) is chronologically sensitive (Junker n.d.).

A number of metric and categorical attributes were recorded for each earthenware rim sherd. These included: rim diameter, neck diameter, rim height, neck height, lip thickness, rim thickness, neck thickness, rim angle, and body angle. Rim orientation, rim angle, body angle, and rim diameter are the primary attributes for ascertaining vessel shape. Rim height, rim width, lip thickness, and rim

thickness were the attributes initially selected for analyzing rim design within each class of vessel shape. Based on a comparison of rim designs from excavated sites in the Dumaguete-Bacong area with a sample from excavated sites in the Bais area (Bacus 1995), it appears that categorical attributes of lip and rim shape may provide a means for differentiating chronologically diagnostic rim designs that would allow easier recognition during the course of fieldwork. Since a larger sample of rims is required to establish an earthenware rim design regional chronology, rim design is not included in the following discussion.

Rim sherds were also coded, where possible, for overall vessel shape, defined a priori as unrestricted vessels (i.e., rim diameter $\geq$ maximum vessel diameter) with either simple, inflected, or composite body contours (i.e., carinated) and restricted vessels (i.e., rim diameter $<$ maximum vessel diameter) with either simple, inflected, or composite body contours (following Shepard 1965, although independent and dependent restricted were not differentiated in this study). Coding of overall vessel shape, although redundant with a number of the other attributes recorded, allowed a visual assessment of shape from rim sherds that could not be measured (e.g., due to small size) for the other attributes relevant to determining shape. These vessel shape classes can also incorporate Junker's morphological types from Bais region sites (see Junker n.d.: 130–135, 142; 1982: 278–292). This will facilitate later comparison of sites, activities conducted at sites, and site function from these two areas, as well as with other sites in the Philippines. Excavated rim sherds were also checked for refits with one another. The majority of the rims appear, on the basis of differences in rim and lip shape, to derive from different vessels. Only three pairs of rim sherds could be refitted or otherwise assigned to the same vessel.

Forty-five percent of the dated rims were complete enough to record all nine attributes. Thus vessel shape can only be assessed at this time on the basis primarily of rim orientation and angle (i.e., everted, straight, inverted corresponding to 0–85, 90, 95–180 degrees, respectively). Rim sherds are illustrated in Figs. 7–9. However, body angle, overall vessel shape (from rim-body profiles), and/or rim diameter are also used where possible. Table 4 presents the results of the morphological analysis of the rim sherds.

Based on studies of ethnographically recorded relationships between pottery form and function (e.g., Ericson et al. 1972; Henrickson and McDonald 1983; Smith 1985), it is possible to suggest some of the primary uses served by the Unto vessels. Among the morphological shapes represented by the Unto rims, the predominant vessel shape in each period appears to be the restricted vessel with either inflected or composite contours. The small quantity of carinated body sherds in the earthenware samples (i.e., four each from the first century B.C. and fifteenth century A.D., eight from the post–fifteenth century A.D.) suggests that most vessels had inflected and not composite contours. Restricted vessels with inflected contours may, depending on their size, be used for storage and/or cooking (Henrickson and McDonald 1983: 631; Rice 1987: 241). Relatively thin walls are expected on cooking vessels since they allow, for example, better heat conduction (cf. Henrickson and McDonald 1983: 631; Rice 1987: 237), and this characterizes the Unto restricted vessels (see Appendix technological types 1, 16–18, 21–22, 27, 29–30, 32–33, 35, 37–38, 43, 46), which suggests their use in cooking. Restricted vessels with inflected contours (i.e., globular vessels with

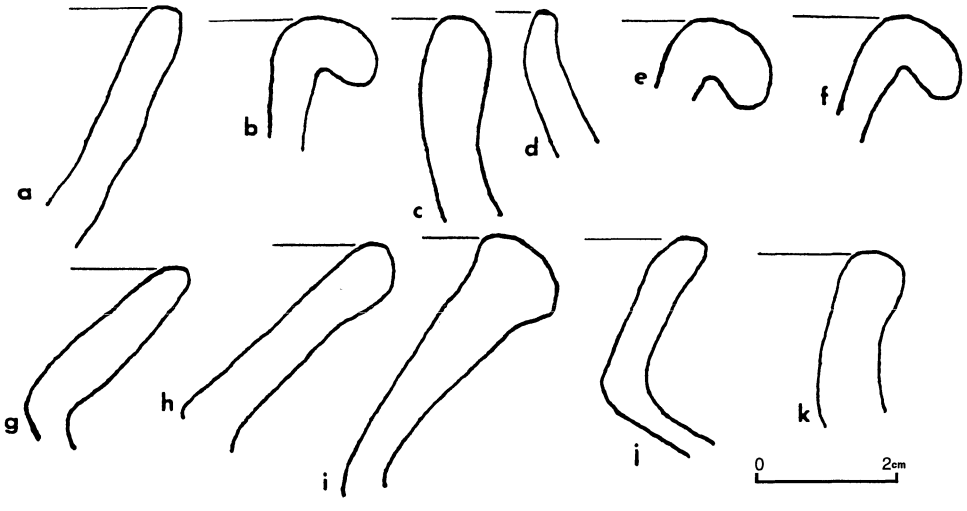

Fig. 7. Profiles of a sample of late first millennium B.C. rims. See Table 4 for details.

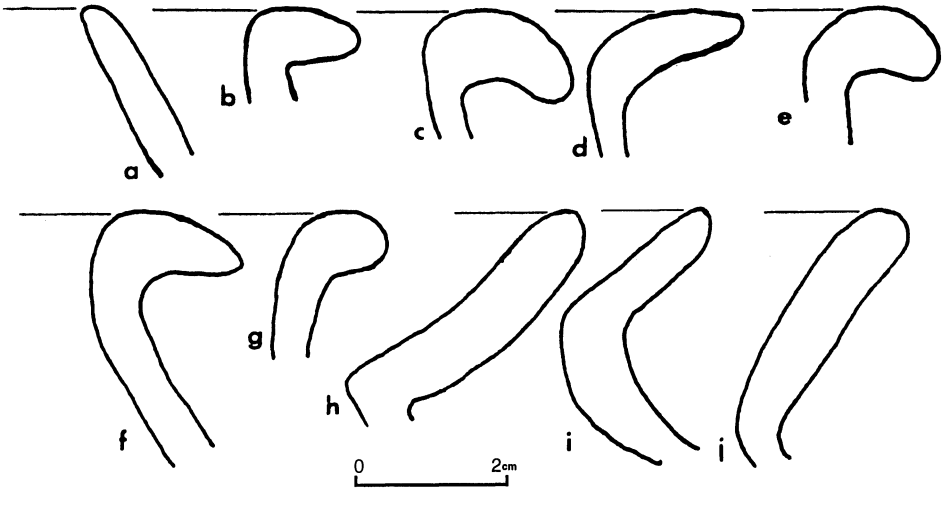

Fig. 8. Profiles of a sample of fifteenth-century A.D. rims. See Table 4 for details.

everted rims) also characterize ethnographic and contemporary cooking vessels in the Philippines (e.g., Solheim 1952, 1964; Spoehr 1973).

Unrestricted vessels with either inflected or composite contours appear to be the next most common vessel shape in each period. Although the rim-body profiles were not complete enough to differentiate between those with inflected versus those with composite contours, it is likely (again given the small number of carinated sherds) that many of the vessels had inflected contours. Vessels of such shape allow easy access to their contents, and may have also been used for cooking or temporary storage (Rice 1987 : 239, 241).

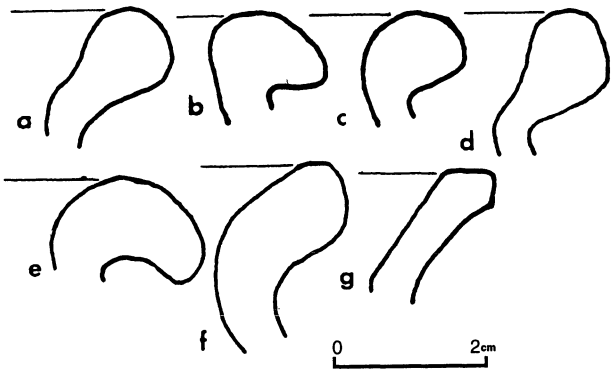

Fig. 9. Profiles of a sample of fifteenth-/post-fifteenth-century A.D. and post-fifteenth-century A.D. rims. See Table 4 for details.

Restricted and unrestricted vessels with composite contours (i.e., carinated or angled contours) would most likely not have been used for cooking since such contours would increase the likelihood of thermal damage and decrease the vessel surface exposed to heat (cf. Henrickson and McDonald 1983 : 637; Rice 1987 : 237; Rye 1976). Instead, carinated vessels may have been used for serving food or temporary storage.

Both unrestricted vessels with simple contours (e.g., bowls) and restricted vessels with simple contours (e.g., restricted bowls) are poorly represented in each period (i.e., one of each at most in each period). The shape of the former allows easy access to and viewing of the contents, which makes it suitable for use in serving and eating, whereas the restricted orifice of the latter vessel shape is primarily useful for keeping contents such as liquids inside, which suggests its use in cooking, processing, or serving (Henrickson and McDonald 1983 : 632; Rice 1987 : 241; Smith 1985 : 304). The scarcity of unrestricted bowls at Unto suggests that one of the other vessel shapes may have served as a functional equivalent of these bowls. Alternatively, serving vessels may have been made of perishable materials since such pottery vessels should occur in greater frequency (vis-à-vis, for example, cooking or storage vessels) in the archaeological record given their higher breakage rates (David 1972; DeBoer 1974; Foster 1960; Shott 1996), which current evidence indicates is not the case at this site.

The results of the morphological analysis suggest that the same general vessel shapes are represented in each period in approximately the same proportions. This may indicate that similar activities (e.g., cooking) occurred throughout the several periods of occupation. However, the majority of the rim sherds do not include a sufficient portion of the body to differentiate between vessels with inflected versus composite contours, and thus possibly dissimilar vessel shapes are currently grouped together. Only a larger sample of such rim sherds will allow discrimination of these vessel shapes, which in turn should provide additional information on the activities engaged in during each period and the changes that may have occurred over the occupation of this site.

TABLE 4. UNTO EARTHENWARE VESSEL MORPHOLOGY

TIME PERIOD	NO. VESSELS (NO. OF RIMS)[a]	RIM ORIENTATION (NO. OF VESSELS)[b]	VESSEL SHAPES (RIM DIA.)
First century B.C.	26 (28)	Everted (24)	1 unrestricted simple (16 cm) (Fig. 7*a*)
			3 unrestricted inflected (2 having dia. of 7 and 13 cm) (Fig. 7*b–d*)
			11 restricted inflected or composite (10–12 cm) (several illus. in Fig. 7*e–k*)
			8 unknown
		Inverted (2)	2 unknown (20 cm)
Fifteenth century A.D.	51 (51)	Everted (45)	1 unrestricted simple (12 cm)
			5 unrestricted inflected or composite (11–18 cm)
			26 restricted inflected or composite (11–20 cm) (several illus. in Fig. 8*b–j*)
			13 unknown
		Inverted (2)	1 restricted simple (11 cm) (Fig. 8*a*)
			1 unknown (11 cm)
		Straight (1)	1 restricted inflected (18 cm)
Fifteenth/post-fifteenth century A.D.	40 (40)	Everted (36)	1 unrestricted simple (19 cm)
			4 unrestricted inflected (13–20 cm) (one illus. in Fig. 9*a*)
			22 restricted inflected or composite (8–20 cm) (several illus. in fig. 9*b–e*)
			9 unknown
		Inverted (3)	3 restricted
Post-fifteenth century A.D.	22 (22)	Everted (19)	1 unrestricted simple
			2 unrestricted inflected (1 has 24-cm diam.)
			8 restricted inflected or composite (12–20 cm) (two illus. in Fig. 9*f–g*)
			8 unknown
		Inverted (1)	1 restricted simple (20 cm)

[a] 141 of the 221 rim sherds could be dated at this time.
[b] Number of vessels may be less than total vessels because rim orientation and angle could not be recorded for all rim sherds.

Technological Analysis and the Construction of an Earthenware Chronology

The Dumaguete-Bacong area was, with the exception of the Magsuhot/Solamillo excavations, almost archaeologically unknown prior to the 1987 and 1988–1989 fieldwork undertaken by the author. One of the research aims in the archaeological investigation of this area was, and will continue to be, the construction of an earthenware-based chronology that will allow cross-dating of sites[6] recorded during the 1988 systematic survey (as well as of sites that will be recorded in future surveys in this region). Dating of the survey sites will be crucial for the forthcoming study of settlement patterns in the Dumaguete-Bacong area, which will provide a regional context within which to situate the Unto site. Toward this end,

a technological analysis of the Unto earthenware pottery, primarily from radiocarbon dated contexts, was conducted to identify chronologically diagnostic technological types. The techniques of analysis are briefly presented here as well as the resulting technological types. It should be noted that since little is known at this time of the nature of earthenware production and distribution during the periods of occupation at Unto, it is likewise unknown which of the earthenware technological types will be useful for cross-dating sites within the region.

A focus on technological attributes related to the manufacture of earthenware pottery was selected as the basis for the construction of a regional earthenware chronology because previous technological analysis of earthenwares from excavated sites in the Bais area have proven successful in defining chronologically sensitive types (and it is one of the few areas in the Philippines for which a regional chronology has been established [Junker n.d., 1982, 1990: Appendix I]). In addition, given the proximity of the Dumaguete-Bacong and Bais areas (about 30 km apart straight-line distance), a technological analysis of the Dumaguete-Bacong earthenwares would facilitate comparison of the earthenware types from the two areas allowing, for example, the identification of those produced in the other area and cross-dating of sites.

The studies of the Bais and Tanjay earthenwares use a monothetic hierarchical classification scheme to define chronologically diagnostic "types" based on readily identifiable technological characteristics (i.e., composition, grain size and shape, and ratio to clay of nonplastic inclusions or "temper"; paste color, surface texture, surface finish, vessel wall thickness, firing quality, thickness of firing core, and surface hardness) related to three stages of pottery production: selection and preparation of raw materials, forming and finishing, and firing (see Junker n.d.: 92, 1982). This approach, which is followed in this study, focuses on technological attributes of pottery production due, in part, to Schwab's (1983) observation that there exists abundant and considerable geographic and stratigraphic diversity in the clays and volcanic-derived sands in southeastern Negros. Hence the materials selected by prehistoric/early historic potters are unlikely to be spatially or temporally homogenous, especially if a number of forms of pottery production (e.g., household, specialized) existed. The expectation that technological variability exhibits clear spatial and temporal patterning related, at a general level, to such patterning in prehistoric cultural systems is based on several other assumptions: (1) potters are influenced by transport costs in selecting raw materials (i.e., they tend to use local rather than more distant raw material sources) (Arnold 1981); (2) functional and cultural considerations dictate raw material choices when multiple raw material sources are available; (3) raw material choices tend to shift over time as sources are depleted and/or innovative technologies emerge (Junker n.d.: 92); (4) earthenware raw material rather than vessel form or decoration is the more unambiguous identifier of nonlocal earthenwares (which is supported by analyses reported in Bacus 1995; Junker n.d., 1990); and (5) finishing and firing of earthenwares varies both within and between pottery manufacturing communities (e.g., Lauer 1974; Reina and Hill 1978; Rye and Evans 1976). Methodologically, such technologically based pottery analyses and typologies are more useful for pottery samples comprised primarily of sherds (Van der Leeuw 1976). This characterizes the earthenware samples from sites in both the Dumaguete-Bacong area and the Bais area, where the majority of the samples are comprised of plain body sherds.

The monothetic hierarchical approach to archaeological classification is an attribute-oriented typological approach (Spaulding 1953; Whallon 1972) in which the attributes, selected according to the specific research problem, are weighted. That is, they are ranked according to some criteria of relevance to the research problem and considered individually. This approach results in the creation of a class of entities that possess a unique, diagnostic set of attribute values. Following Junker's most recent (1990) application of this classificatory approach, temper composition serves as the "first rank" division for the definition of technological types. Further divisions are made on the basis of any other heterogeneous attributes; that is, attributes of temper properties (e.g., ratio of temper constituents, temper percentage) and/or of surface properties (e.g., surface finish, texture).

Table 5 summarizes the technological attributes selected for analysis and the techniques used to measure each attribute. Variation in temper was measured in several ways: as distinct combinations of mineral constituents, a ratio of the various temper constituents, the relative size and angularity of the temper grains, and the amount of temper relative to the clay matrix. Thus different ware types could contain temper sands that were identical mineralogically but were differentiated on the basis of variation in the size of the grains, the relative contribution of each temper constituent, the angularity of the temper grains, and/or the amount present in the paste.

All earthenware sherds were examined under the microscope and were assigned to technological types based on the attributes recorded as listed in Table 5. The appendix presents a summary of the technological characteristics and chronological distribution of the 46 technological types identified from the Unto excavated earthenware sample. These dated technological types are important for building an earthenware-based regional chronology for the Dumaguete-Bacong area, and thus for cross-dating sites both within as well as outside the region (see Bacus 1995 for discussion of technologically similar earthenwares found at sites located in different areas/islands; e.g., Unto and site C40 on Siquijor, Yap, and Tanjay). The next stage in the technological analysis will be to conduct petrographic analysis of thin-sections of a sample of each type: (1) to more accurately assess their internal homogeneity and external heterogeneity and reassign/combine types if necessary, and (2) to identify additional key mineral/rock/other temper constituents of each type that are recognizable with a low-power microscope or hand lens to aid further in recognizing these types, especially during the course of fieldwork.

DISCUSSION

Excavations at Unto have uncovered evidence for prehistoric occupation in the Dumaguete-Bacong area during both the late first millennium B.C. and mid-second millennium A.D. This paper has presented a summary description of the excavations and material remains found, as well as results of the technological and morphological analyses of the earthenware assemblages. Since analysis of the Unto site is still in progress, the paper concludes with a number of observations and current interpretations for each of the periods of occupation.

TABLE 5. DESCRIPTION OF ATTRIBUTES USED IN TECHNOLOGICAL ANALYSIS OF EARTHENWARE POTTERY

VARIABLE	MEASUREMENT	TECHNIQUE	RANGE OF VALUES
Temper composition	Mineralogical and/or nongeological elements	Indentification with a low-power (30X) binocular microscope[a]	Quartz, feldspar, olivine, hornblende, mica, carbonate material, hematite, garnet, biological materials, shell, limonite, apatite
Temper percentage	Percentage contribution of tempering material to the combined clay/temper matrix	Estimated to the nearest 5% using a visual percentage chart	<5%–40%
Temper constituent fraction	Fraction of total temper comprised by each temper constituent	Each temper constituent estimated to the nearest 0.1 of total temper. Obtained by counting grains within a 25 mm^2 grid with a 30X microscope	0.1–1.0 (with 0.1 intervals)
Temper grain size	Mean diameter of each temper constituent	10 grains of each temper constituent using 0.02 mm scale @ 50X attached to microscope	>0.02 mm
Temper grain shape	Relative angularity/roundedness of quartz grains	Visual comparison with a standardized grain shape chart	Very angular (1), angular (2), subangular (3), subrounded (4), rounded (5), well rounded (6)
Surface texture	Relative smoothness/coarseness of the exterior sherd surface	Tactile assessment	Fine (1), medium (2), coarse (3)
Surface finish	Prefiring treatment of vessel surface (excluding decoration)	Visual assessment	Smoothed (1), burnished (2), polished (3), slipped and smoothed (4), slipped and burnished (5), painted (6), resin coated (7), indeterminable (9)
Decorative treatment	Techniques of decoration	Visual assessment	Incised (1), impressed (2), stamped (3), carved (4), carved paddle (5), applique (6)

[a] Thin sectioned and petrographically analyzed Bais earthenware technological types served as the basis for temper identification.

First Century B.C. Occupation

For the early occupation the evidence suggests a settlement of at least 1 ha (for all periods), although perhaps much larger, with at least one large residential structure (as suggested by the size of the post molds). Associated with this structure are pit features, a number of which contained earthenware sherds, fragments of charcoal, and other burnt organic material, and a midden containing similar remains.

The earthenware pottery from this early period is very distinctive from later period technological types from this site and other sites in southeastern Negros (e.g., Yap, Magsuhot/Solamillo, Tanjay) in the technological characteristics of the pastes, relative thinness of the vessel walls, and the surface treatment (i.e., red slip and burnishing/polishing on a reduced surface) received on two of the technological types (1 and 4, respectively). Although there is some evidence for earthenware production during this period (i.e., fired clay lumps), it is limited and it is not yet known whether all of the 13 technological types identified for this period were produced at the site. The forthcoming results of the analysis of the 1988 survey material will help elucidate the distribution patterns of these, as well as of the later period earthenwares, within the Dumaguete-Bacong area.

Faunal remains were not recovered and the presence of macrobotanical remains has not yet been ascertained. At this point, little can be reconstructed of the subsistence economy during this period. Rice husk impressions in several earthenware sherds have been tentatively identified by Richard Ford of the University of Michigan. These impressions appear to represent accidental inclusions in the paste and not a type of tempering material. Their presence suggests that the inhabitants of the site engaged in rice cultivation, which would not be unlikely given radiocarbon-dated rice remains from elsewhere in the archipelago indicating its cultivation during the second millennium B.C. (Snow et al. 1986). Further evidence, though, is clearly needed to reconstruct agricultural practices during the late first millennium B.C. in the Dumaguete-Bacong area.

Unlike for the later period of occupation, there are no published reports on sites of this period on the island of Negros with which to compare the Unto site. For the Philippine archipelago as a whole, there are only a few published reports on sites broadly contemporaneous with Unto; that is, sites with occupations radiocarbon dated to the second half of the first millennium B.C. (a period cross-cutting traditional chronological categories often used in the literature; i.e., "Late Neolithic," "Early Metal Age," or "Iron Age" [e.g., Fox 1970, 1979; Solheim 1964]). Furthermore, they—Arku Cave, Luzon; Bato Cave 1, Luzon (and probably Caves 2 and 3, which yielded similar artifacts); Manunggul Cave (Chamber B), Palawan; Pintu Rock Shelter, Luzon—are all cave or rockshelter sites and not open-air sites.

Three of the sites—Arku Cave, Bato Cave 1, and Manunggul Cave—appear to have been primarily used for burial. Arku Cave, with calibrated ages and ranges of B.C. 102(A.D. 5)A.D. 110, B.C. 765(516)402, and B.C. 1194(1019)915 (2010 ± 90 B.P. [Gak-7038] and averages of 2460 ± 80 B.P. [ISGS-495] and 2390 ± 160 B.P. [Gak-7042], 3040 ± 130 B.P. [Gak-7041], and 2740 ± 120 B.P. [Gak-7040], respectively [Thiel 1990:242]; averages calculated using Stuiver and Reimer 1993), yielded the remains of about 57 individuals from several types of secondary burials, including jar burial and cremation. Associated artifacts included earth-

enware pottery, ornaments (e.g., earrings made of shell, stone, jade, and fired clay; beads made of stone, shell, bone, and wood; shell bracelets), adzes, spindle whorls, and bone points (Thiel 1990). Bato Cave 1, with a calibrated age range of B.C. 773(394)117 (2692 ± 250 B.P. on marine shell [M-727A][7]) (Stuiver and Braziunas 1993), yielded 18 earthenware burial jars and other earthenware vessels. The burial jars each contained disintegrated human bones, shells (marine, terrestrial snail), shell or shale beads, and other shell artifacts. Stone axes and flake knives were found in three jars (Fox and Evangelista 1957:50). Chamber B of Manunggal Cave has a single radiocarbon date (2140 ± 100 B.P. [UCLA-992C]) which provides a calibrated age and range of B.C. 361(173)36 (Stuiver and Pearson 1993). In addition to the primarily plain earthenware burial jar and other vessel fragments, iron fragments, shell spoons, pebble hammers and polishing tools, beads made of various materials (i.e., glass, shell, onyx, jade, carnelian, and other stone), and bracelets of glass and jade were recovered.

In contrast to these three cave sites and the Unto site, Pintu Rock Shelter appears to have been a "broad-spectrum hunting and collecting frequentation site" (Peterson 1974:29). Two cultural levels were uncovered. The younger level (comprised of layers 1–7) yielded two accepted radiocarbon dates (2260 ± 150 B.P. [Gak 2940; layer 4] and 3290 ± 230 B.P. [Gak 2942; layer 6] [Peterson 1974:30]) which produce calibrated ages and ranges of B.C. 409(368)113 and B.C. 1875(1525)1312, respectively (Stuiver and Pearson 1993). Although these radiocarbon determinations (pre-7000 series from Gakushiun laboratory) should be viewed with extreme caution, Spriggs has pointed out that the later date "agrees closely with those from comparable contexts dated by other laboratories" (1989:604). The assemblage from the occupations comprising the younger cultural level includes 980 core tools and utilized flakes, as well as small quantities of bone artifacts (e.g., points and needles), fragmentary earthenware sherds, glass beads, and deer, pig, monkey, rodent, snake, turtle, shellfish, and terrestrial snail remains (Peterson 1974:28–30).

Given the variability represented in the locations and uses of these sites, it is not unexpected that their respective assemblages differ from that of the Unto site. The presence of red-slipped earthenwares at Unto, though, may well be of cultural-historical significance given Bellwood's observation regarding early Neolithic phase (c. 3000–500 B.C.) sites, which include such Philippine sites as Arku Cave and earlier sites (e.g., Bagumbayan and Dimolit), as characterized by the presence of "simple pottery forms with plain or red-slipped surfaces" (1985:223). Furthermore, even though these sites are broadly contemporaneous, there are no archaeological sequences for the regions within which the cave/rockshelter sites are located. As a result, the place of these sites within their respective cultural sequences is difficult to ascertain, as is the degree to which any meaningful comparisons might be made between them that could elucidate the nature of and variability in social, political, and economic organization during the late first millennium B.C. Further investigation of sites of this time period, specifically within a regionally focused research program, is clearly needed.

The Unto site, once it is situated within a regional context of other contemporaneous sites (identified from analysis of the Dumaguete-Bacong survey data), will thus allow a number of such issues concerning the late first millennium B.C. to be addressed. In addition, the combined data from Unto and the survey should be

relevant to investigating the development of sociopolitical complexity in southeastern Negros as they date to the period just prior to the earliest occupation and burials from the Magsuhot/Solamillo site (third century A.D.) (but see note 5), the evidence from which has been interpreted as indicating developing social complexity (Hutterer 1977).

Fifteenth Century A.D. Occupation

Excavations uncovered the remains of five structures, most presumably residential, from this period of occupation. Structure 1 is represented by a single post mold (Feature 6) and is associated with a small quantity of plain earthenware sherds. Structure 2, also represented by a single post mold (Feature 7), is associated with a midden containing earthenware sherds, clay lumps, and pieces of charcoal. It is possible that Features 6 and 7 may have belonged to the same structure, although the distance between them (about 10 m) tends to suggest otherwise. Structure 3 is represented by a single small post mold (Feature 10) and is associated with two earthenware sherds. A small basin-shaped clay-filled feature (11) may have been associated with this structure. It may represent a possible pottery-making area, although no pottery-making tools are associated with it. Structure 4 is represented by four (Features 15a–b, 15d–e), possibly five (Feature 15c), post molds that range in diameter from 13 cm to 26 cm. Associated with these post molds are plain and decorated earthenware sherds. The posts appear to have been sunk into a thick midden deposit containing plain and decorated earthenware sherds (of the same technological types as those in the immediately overlying strata) and charcoal. Structure 5 is represented by three small (5–7 cm in diameter) post molds (Features 13, 14a–b) and appears to postdate Structure 4 since its post molds are in overlying strata. Associated with the post molds of Structure 5 are plain and decorated earthenware sherds (of the same technological types as are found with Structure 4).

Interestingly, except for Structure 5, the sizes of the post molds (i.e., diameters of 13–35 cm) suggest substantial structures similar in size to those interpreted as fifteenth–sixteenth century elite residential structures at the Yap site (i.e., post mold diameter of 26+ cm [Bacus 1995]) and Tanjay site (i.e., post mold diameters of 15–30 cm [Junker 1990:666]). Both sites are currently interpreted as regional political centers (Bacus 1995; Junker 1990). Such interpretations of structures as elite residences have been based on their projected size and/or associated artifacts, a number of types of which (e.g., Asian trade wares, iron, decorated earthenwares) exhibit differential distribution within the site or region consistent with their interpretation as prestige goods.

The presence of a fifteenth-century blue-and-white Asian trade ware sherd may be of some significance in this regard since glazed trade wares of this date are fairly restricted in their distribution among sites in the Dumaguete-Bacong area (Bacus 1995). The largest quantity of glazed trade wares of this date has so far been recovered from (both excavation and surface collection of) the Yap site, a large eleventh–sixteenth century coastal settlement in Dumaguete City which analysis suggests was a late prehistoric chiefly political center (Bacus 1995). Only two other sites in the area (VII-88-H3 and VII-87-G3) have yielded wares of this date (although it is not unlikely that excavations at some of the survey sites will

yield Asian trade wares of this date). Such limited distribution of glazed Asian trade wares appears consistent with previous research, which has shown these goods to be restricted to elite residences and settlements during the late prehistoric period (Junker 1990; Nishimura 1992). This suggests that Unto was inhabited by low-ranking elite individuals.

Similarly, decorated earthenwares may also be limited in their distribution within the Dumaguete-Bacong area, although not as restricted as glazed Asian trade wares (Bacus 1995). Evidence from the Bais area indicates that decorated earthenwares were prestige items that moved through restricted elite exchange networks from Tanjay to more distant settlements during the fifteenth and sixteenth centuries (Junker 1990:885, 890–891). Their presence at Unto may lend support to the suggestion that this site was occupied by low-ranking members of the elite. This will require further investigation because it has not yet been demonstrated that the decorated wares at the Unto site were prestige items. Analysis of the settlement pattern data should help elucidate the sociopolitical nature of Unto, and thus the context of these wares, during the mid-second millennium A.D.

Twenty-three of the earthenware technological types have been dated to this period. As in the earlier period of occupation, there is some evidence for earthenware production during this period in the form of a small quantity of fired clay lumps and the clay-filled feature possibly associated with Structure 3. Although the majority of the earthenware may have been produced at this site, a small quantity may have been produced at Yap and Tanjay as suggested by their similarity to technological types from these sites. The implications for late prehistoric patterns of distribution and exchange of earthenware pottery will be more appropriate to consider within the forthcoming regional study.

There is little evidence pertaining to the subsistence economy during this period, as few faunal remains (three shell fragments and one tooth fragment) were recovered and the presence of macrobotanical remains has not yet been determined. No rice inclusions were found in the earthenwares of this period.

Post-Fifteenth-Century A.D. Occupation

For this period of occupation the remains of only one structure, as represented by a single post mold (Feature 9), were uncovered. No artifacts are associated with this feature. As with the previous periods, little can be reconstructed of subsistence since few faunal remains were recovered (i.e., ten shells, one tooth fragment, and two bone fragments) and some may represent modern trash.

A small quantity of fired clay lumps was recovered, suggesting that earthenware production at this site continued into the early historic period. Eleven of the earthenware technological types have been assigned to this period. There is also evidence for iron production in this period. A small quantity of slag (four pieces) was recovered from the excavations and may well indicate iron production activities in the vicinity of, and not necessarily at, this site. Metal fragments, primarily iron, were also recovered. Neither slag nor iron was recovered in the earlier occupations, which suggests a possible change from the earlier periods in the regional location of iron production and distribution of iron objects. Archaeological research at the late prehistoric political centers at Tanjay (Junker 1990) and

Cebu City (Nishimura 1992), as well as an early historic account (Anonymous 1570 [1903]: 102–103), indicates that iron production was under chiefly control and that within the Tanjay polity iron objects had a restricted distribution. Current evidence indicates that iron production occurred at Yap from the eleventh to fifteenth–sixteenth centuries and possibly into the early historic period. Furthermore, initial analysis of the survey materials indicates that iron goods were limited in their distribution within the region (Bacus 1995). Further work is required on the temporal distribution of iron and its distribution according to types of settlement in the Dumaguete-Bacong area.

CONCLUDING REMARKS

As is clear from the current interpretations of the remains from each period of occupation, further analyses are required to more fully investigate various aspects of the Unto site's sociopolitical and economic organization during the late first millennium B.C. and mid-second millennium A.D. Most important in this regard is obtaining additional absolute dates for the later periods of occupation, further testing to establish the spatial limits of each period of occupation, and analysis of the Dumaguete-Bacong survey data to provide a regional context in which to interpret the Unto occupations. Nevertheless, the excavations at the Unto site provide significant new material from an otherwise relatively little known period of prehistory in southeastern Negros and in the Philippine archipelago. Furthermore, it contributes new material important for investigating the development and organization of prehistoric complex political formations in the Dumaguete-Bacong area.

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NOTES

1. The 1987 fieldwork involved surface collections and test excavations of two possible agricultural and habitation sites: Marino site (VII-87-G3) and Pis-an site (VII-87-H3) (see Bacus 1995, n.d.).
2. Although the possible agricultural terraces did not extend up to 100 m in elevation, the survey area did so as to facilitate comparisons with the Bais Anthropological Project's survey results of this elevation zone in the Bais region (which includes a much broader coastal flood plain than the Dumaguete-Bacong area) (Hutterer and Macdonald 1979, 1982; Junker 1990; Macdonald 1982).

3. "Site" refers to a surveyed field/area that yielded artifacts, all of which were piece-plotted. The project employed a non-site survey approach (e.g., Ebert 1992) and the aim was to plot artifact distributions across the landscape of the surveyed region for later distributional analysis (including, for analytical purposes, the definition of sites as discrete artifact clusters).
4. The Edjek site has one radiocarbon date of 3475 ± 235 B.P. (Beta 1117) (Hutterer 1982:213) from the earliest level of occupation, which is considerably earlier than that at the Unto site. However, the charcoal sample did not derive from a secure context and Hutterer states that this date "must be used with very great caution" (1982:216).
5. The radiocarbon dates from the earliest occupation of the Unto site (see Table 1) and the Magsuhot/Solamillo site produce an averaged date of 2068 ± 55 B.P. with a calibrated age and range of B.C. 160(49)A.D. 3 (Stuiver and Pearson 1993).
6. Although the majority of the survey sites yielded dateable Asian trade wares, the cross-dating of these sites using diagnostic earthenwares will be necessary, first, to determine the presence of "pre-porcelain" (i.e., pre-tenth/eleventh century) and early "porcelain" periods of occupation that may yield few Asian trade wares, and second, to date those sites lacking Asian trade wares because of differences related to function, hierarchical placement within the sociopolitical system, etc.
7. This radiocarbon date was reported in *Radiocarbon* 1:196.

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ABSTRACT

The Dumaguete-Bacong area of southeastern Negros Island has been the recent focus of probabilistic, systematic regional survey that has identified, to date, over 70 "sites," and of systematic excavations at two of the recorded sites. In 1989 excavations were undertaken at one of these, the Unto site, which uncovered evidence for two periods of prehistoric occupation, the earliest of which dates to the late first millennium B.C. and the later to the mid-second millennium A.D. This site is significant in several respects, including yielding the earliest evidence for occupation in the southeastern Negros region and the presence of decorated earthenwares identical to a number of previously undated decorated wares (e.g., "Kalanay") that have been recovered from a number of islands in the central Philippines.

This paper presents a summary of the excavations, of the features and artifactual remains uncovered, and of the morphological and technological analyses of the earthenware assemblages. Evidence of residential structures was uncovered in each period of occupation. Associated with these structures were middens yielding plain and decorated (i.e., slipped, incised, and/or carved) earthenware sherds, lithic artifacts, sherds of Asian and European tradewares, iron slag, metal fragments, fired clay lumps, and shell, bone, and tooth fragments. The paper concludes with a discussion of each of the two periods of prehistoric occupation and of a third, possibly early historic period of occupation at the site. Further analysis of the Unto site, especially within a regional context, will provide important information for addressing a number of questions central to our understanding of southeastern Negros prehistory including: the nature of sociopolitical complexity during the late first millennium B.C./early first millennium A.D., the production and distribution of "Kalanay" wares, and the changing sociopolitical context of decorated earthenwares. KEYWORDS: earthenware, ceramic analysis, chronology, "Kalanay" wares, Negros Island, Philippines, Southeast Asia.

Appendix. Summary of Unto Earthenware Technological Types

Type No.	Surface		Temper				Wall Thick.		
	Text.	Fin.	%	Comp.	Grain Size	Angl.	(Mean)	Dec.	Time Period
1	1	1,4,5	5–20	Hornblende 0.6 Quartz 0.2 Feldspar 0.2	0.1–0.3 mm 0.1–0.2 mm 0.05–0.1 mm	2–3	0.35 cm	Slipped	1st century B.C.
2[a]	1	1	20	Hornblende 0.5 Quartz 0.4 Feldspar 0.1	0.1–0.25 mm 0.2–0.3 mm 0.1–0.3 mm	4	0.50 cm		1st century B.C.
3	1	1,2	<5–5	Quartz 0.5 Hornblende 0.2 Feldspar 0.2 Hematite 0.1	0.3–0.4 mm 0.2 mm 0.3–0.4 mm 0.3–0.4 mm	3	0.40 cm		1st century B.C.
4	1	3	<5	Hornblende 0.5 Hematite 0.4 Quartz 0.1	0.1 mm 0.15 mm 0.1 mm	4	0.35 cm		1st century B.C.
5	1	1	20–25	Hornblende 0.5 Qtz/fldspr 0.5	0.1–0.3 mm 0.1–0.2 mm	2	0.40 cm		1st century B.C.
6	1	1	10	Hornblende 0.5 Quartz 0.2 Silic. bio. 0.3	0.1 mm 0.1 mm 0.05 mm	2	0.40 cm		1st century B.C.
7	1	1	10–15	Quartz 0.75 Hornblende 0.25	0.2–0.3 mm 0.1–0.2 mm	2–3	0.30 cm		1st century B.C.
8	1	1	10	Hornblende 0.5 Quartz 0.25 Hematite 0.25	0.35–0.4 mm 0.3–0.35 mm 0.2–0.3 mm	4	0.50 cm		1st century B.C.
9	1	1	20–25	Quartz 0.6 Hornblende 0.2 Feldspar 0.15 Hematite 0.05	0.3–0.35 mm 0.25–0.4 mm 0.35 mm 0.15–0.2 mm	3–4	0.35 cm		1st century B.C.
10	1	1	15	Hematite 0.65 Quartz 0.2 Hornblende 0.15	0.25 mm 0.25 mm 0.25 mm	4	0.35 cm		1st century B.C.

(*continues*)

APPENDIX. (*continued*)

TYPE NO.	SURFACE TEXT.	SURFACE FIN.	TEMPER %	TEMPER COMP.	TEMPER GRAIN SIZE	TEMPER ANGL.	WALL THICK. (MEAN)	DEC.	TIME PERIOD
11	3	1	20	Quartz 0.5 Feldspar 0.25 Hornblende 0.2 Hematite 0.05	0.4–0.6 mm 0.5–0.85 mm 0.35–0.4 mm 0.25 mm	3–4	0.45 cm		1st century B.C.
12	1	1	10	Hornblende 0.4 Feldspar 0.25 Quartz 0.2 Hematite 0.15	0.35–0.5 mm 0.35–0.45 mm 0.3–0.35 mm 0.2–0.25 mm	4–5	0.60 cm		1st century B.C.
13	1–2	1	20–25	Hornblende 0.45 Quartz 0.35 Feldspar 0.15 Hematite 0.05	0.3–0.45 mm 0.35–0.45 mm 0.35–0.45 mm 0.2–0.25 mm	5	0.40 cm		1st century B.C.
14	1–2	1	20–25	Quartz 0.6 Hornblende 0.4	0.3–0.4 mm 0.2–0.35 mm	3–4	0.25 cm		15th century A.D.
15	1	1	10–15	Quartz 0.5 Hornblende 0.25 Hematite 0.2 Feldspar 0.05	0.3 mm 0.3 mm 0.25 mm 0.45 mm	4	0.30 cm		15th century A.D.
16	1–2	1	20–25	Quartz 0.5 Hornblende 0.4 Feldspar 0.1	0.2–0.4 mm 0.1–0.25 mm 0.1–0.3 mm	3–4	0.35 cm		15th century A.D.
17	1	1	15–25	Quartz 0.4 Hornblende 0.2 Feldspar 0.2 Hematite 0.1 Olivine 0.1	0.3–0.4 mm 0.4 mm 0.3–0.4 mm 0.3–0.5 mm 0.4 mm	3	0.35 cm		15th century A.D.
18	1	1	25	Hornblende 0.4 Quartz 0.4 Feldspar 0.1 Hematite 0.1	0.25 mm 0.2–0.25 mm 0.15–0.2 mm 0.15 mm	3	0.45 cm		15th century A.D.

19	1	1	15	Hornblende 0.5 Quartz 0.3 Feldspar 0.1 Hematite 0.1	0.3 mm 0.3 mm 0.35 mm 0.2 mm	4	0.50 cm		15th century A.D.
20	2–3	1	20–25	Hornblende 0.3 Quartz 0.3 Hematite 0.2 Feldspar 0.1 Limonite? 0.1	0.3–0.7 mm 0.3–0.65 mm 0.2–0.5 mm 0.3–0.5 mm 0.4–0.5 mm	3–4	0.60 cm	Incised	15th century A.D.
21	2–3	1	20–25	Hornblende 0.35 Quartz 0.3 Hematite 0.2 Feldspar 0.15	0.2–0.3 mm 0.3–0.4 mm 0.2–0.4 mm 0.35–0.4 mm	4	0.40 cm	Slipped	15th/post-15th century A.D.
22	2	1	15–25	Quartz 0.4 Carbonate 0.2 Hornblende 0.15 Feldspar 0.15	0.4–0.5 mm 0.3–0.35 mm 0.35 mm 0.45–0.5 mm	4	0.50 cm		15th century A.D.
23	1	3	<5	Hornblende 0.5 Hematite 0.3 Quartz 0.2	0.25 mm 0.2 mm 0.3 mm	5	0.40 cm		15th century A.D.
24	1	3?	10	Hornblende 0.8 Quartz 0.15 Hematite 0.05	0.25 mm 0.2 mm 0.2 mm	4–5	0.40 cm		15th century A.D.
25	1	1,3?	20–25	Quartz 0.55 Hornblende 0.3 Feldspar 0.1 Hematite 0.05	0.2–0.25 mm 0.2–0.3 mm 0.2–0.3 mm 0.2–0.3 mm	4	0.55 cm		15th century A.D.
26	2	1	25	Quartz 0.6 Feldspar 0.2 Hornblende 0.1 Carbonate 0.1	0.35–0.5 mm 0.35–0.5 mm 0.2–0.35 mm 0.25–0.4 mm	4	0.35 cm		15th century A.D.
27	2	1	25	Quartz 0.35 Hornblende 0.3 Hematite 0.25 Feldspar 0.1	0.25–0.3 mm 0.15–0.3 mm 0.2–0.3 mm 0.2–0.4 mm	3–4	0.40 cm		15th century A.D.

(continues)

APPENDIX. (*continued*)

TYPE NO.	SURFACE TEXT.	SURFACE FIN.	TEMPER %	TEMPER COMP.	TEMPER GRAIN SIZE	TEMPER ANGL.	WALL THICK. (MEAN)	DEC.	TIME PERIOD
28	1	1	20	Hornblende 0.5 Quartz 0.35 Feldspar 0.15	0.25–0.3 mm 0.3–0.45 mm 0.35–0.4 mm	4	0.70 cm		15th century A.D.
29	1–2	1	20–25	Hornblende 0.45 Quartz 0.4 Feldspar 0.15	0.2–0.3 mm 0.2–0.4 mm 0.15–0.3 mm	3–4	0.40 cm	Incised Impressed	15th century A.D.
30	1	1	25	Quartz 0.35 Hornblende 0.25 Feldspar 0.2 Hematite 0.2	0.35–0.4 mm 0.3–0.45 mm 0.4–0.5 mm 0.25–0.4 mm	4	0.40 cm		15th century A.D.
31	1	1	20	Mica 0.6 Quartz 0.2 Hornblende 0.1 Hematite 0.1	0.3 mm 0.25 mm 0.15 mm 0.1 mm	5–6	0.60 cm		15th century A.D.?
32	2	1	25	Quartz 0.4 Hornblende 0.3 Feldspar 0.25 Hematite 0.05	0.3–0.4 mm 0.35–0.4 mm 0.4 mm 0.45–0.55 mm	4	0.55 cm		15th century A.D.
33	1–2	1,4	25–30	Quartz 0.5 Hornblende 0.4 Feldspar 0.1	0.2–0.5 mm 0.2–0.35 mm 0.25–0.5 mm	4	0.35 cm		15th century A.D.
34	2	1	15–20	Hornblende 0.6 Olivine 0.25 Quartz 0.1 Hematite 0.05	0.25 mm 0.25 mm 0.2–0.25 mm 0.1–0.2 mm	2–4	0.30 cm		15th century A.D.
35	1–2	1	20–25	Hematite 0.45 Hornblende 0.3 Quartz 0.25	0.2–0.3 mm 0.2–0.4 mm 0.25–0.35 mm	3–4	0.40 cm		15th century A.D.
36	2	1	25	Quartz 0.35 Hornblende 0.25 Feldspar 0.25 Hematite 0.15	0.35–0.5 mm 0.3–0.45 mm 0.4–0.55 mm 0.25–0.35 mm	4	0.40 cm		Post-15th century A.D.

37	2–3	1	25	Quartz 0.5 Feldspar 0.3 Hornblende 0.15 Hematite 0.05	0.45–0.5 mm 0.45–0.6 mm 0.45–0.55 mm 0.2–0.4 mm	4	0.45 cm		Post-15th century A.D.
38	1	1	20	Hornblende 0.4 Feldspar 0.3 Quartz 0.3	0.35 mm 0.4–0.45 mm 0.3–0.35 mm	4	0.45 cm	Incised	Post-15th century A.D.
39	1	1	15	Quartz 0.5 Hornblende 0.25 Feldspar 0.2	0.3 mm 0.25 mm 0.35 mm	4	0.70 cm		Post-15th century A.D.
40	3	1	25	Hematite 0.5 Quartz 0.3 Hornblende 0.2	0.2–0.25 mm 0.25–0.35 mm 0.3–0.35 mm	4	0.45 cm		Post-15th century A.D.
41	2	1	20–25	Quartz 0.35 Feldspar 0.3 Hornblende 0.2 Hematite 0.1	0.3–0.35 mm 0.35 mm 0.2–0.25 mm 0.2–0.25 mm	4	0.35 cm	Incised	Post-15th century A.D.?
42	1	1	15–20	Feldspar 0.4 Quartz 0.35 Hornblende 0.2 Hematite 0.1	0.25–0.35 mm 0.2–0.25 mm 0.15–0.2 mm 0.15 mm	5	0.45 cm		Post-15th century A.D.
43	2	1	25–30	Quartz 0.45 Hornblende 0.3 Feldspar 0.2 Hematite 0.05	0.3–0.45 mm 0.25–0.5 mm 0.3–0.45 mm 0.2–0.25 mm	4	0.50 cm		Post-15th century A.D.
44	1	1	25	Quartz 0.5 Hornblende 0.2 Feldspar 0.2 Hematite 0.1	0.2–0.25 mm 0.15 mm 0.2–0.25 mm 0.15–0.2 mm	4	0.40 cm	Carved	Post-15th century A.D.
45	3	1	25	Hornblende 0.45 Quartz 0.25 Olivine 0.15 Hematite 0.15	0.35–0.4 mm 0.4 mm 0.25–0.35 mm 0.35–0.4 mm	4	0.35 cm	Incised	Post-15th century A.D.
46	2	1	30	Quartz 0.4 Hornblende 0.3 Feldspar 0.2 Hematite 0.1	0.3–0.4 mm 0.3–0.35 mm 0.35–0.4 mm 0.2–0.35 mm	4	0.45 cm		Post-15th century A.D.

[a] Carbonized rice husk impressions found in sherds of this type.